Berwick Township
Simplified Design Approach
Worksheet B

Step 1: Determine the amount of impervious area created by the proposed projects. This includes any new surface area that inhibits the infiltration of stormwater into the ground. New stone and gravel areas area considered impervious. Existing impervious areas are not included in this calculation.

Table # 1

Surface	Length	x	Width =	Total Impervious Area (SF)
Buildings				
Buildings				
Driveways				
Parking Areas				
Patios/Walkways				
Decks				
Other				
		Total Proposed Impervious Area =		

Step 2: Determine the Disconnect Impervious Area (DIA). All or parts of proposed impervious surfaces may qualify as Disconnected Impervious Area if runoff is directed to a pervious area that allows for infiltration, filtration and increased time of concentration. The volume of stormwater that needs to be managed could be reduced through DIA. Prepare a Minor Stormwater Management Site Plan to determine DIA.

Determining Status of DIA

a) Determine contributing area of the roof/driveway to each disconnected discharge. If it's 500 ft^2 or less (for a roof) or 1,000 ft^2 or less (for a driveway), continue to "b". If it's greater than these amounts, the area does not qualify as a DIA.

b) Determine the length of down slope pervious flow path available for each disconnected discharge.

c) Determine the % slope of the pervious flow path, % slope = (rise/ run) x 100. Must be 5% or less.

d) See the table on the next page to determine the percentage of the area that can be treated as disconnected. If the available length of the flow path is equal to or greater than 75 ft, the discharge qualifies as entirely disconnected.

Partial Disconnections		
Length of Pervious Flow Path* (ft) Lots 10,000 ft² and Under	Length of Pervious Flow Path* (ft) Lots >10,000 ft²	DIA Credit Factor
0 – 7.9	0 – 14	1.0
8 – 15.9	15 – 29	0.8
16 – 22.9	30 – 44	0.6
23 – 29.9	45 – 59	0.4
30 – 34.9	60 – 74	0.2
35 or more	75 or more	0
*Pervious flow path must be at least 15 feet from any impervious surface and cannot include impervious surfaces.		

Using step 2 calculations calculated from the minor stormwater site plan, complete the table below. This will determine the impervious area that may be excluded from the area that needs to be managed through stormwater management BMP's. If total impervious area to be managed is zero, the area can be considered entirely disconnected and further calculations are not needed.

Table # 2

Surface	Area (SF)	x	DIA Credit =	Impervious Area to be Managed (SF)
Buildings				
Buildings				
Buildings				
Buildings				
Buildings				
Driveways				
Driveways				
Parking Areas				
Patios/Walkways				
Decks				
Other				
			Total Proposed Impervious Surface Area to be Managed (SF) =	

*If total impervious surface area to be managed is greater than zero, continue to Step 3.

Step 3: Calculate the volume of stormwater runoff created by proposed impervious surfaces.

Impervious Area (SF) to be   x   2.8in/12in = 0.233 =   Volume of Stormwater
Managed (Sum from Table 2)   (from 24hr rainfall)   to be Managed (CF)

_____   x   0.233   =   _____

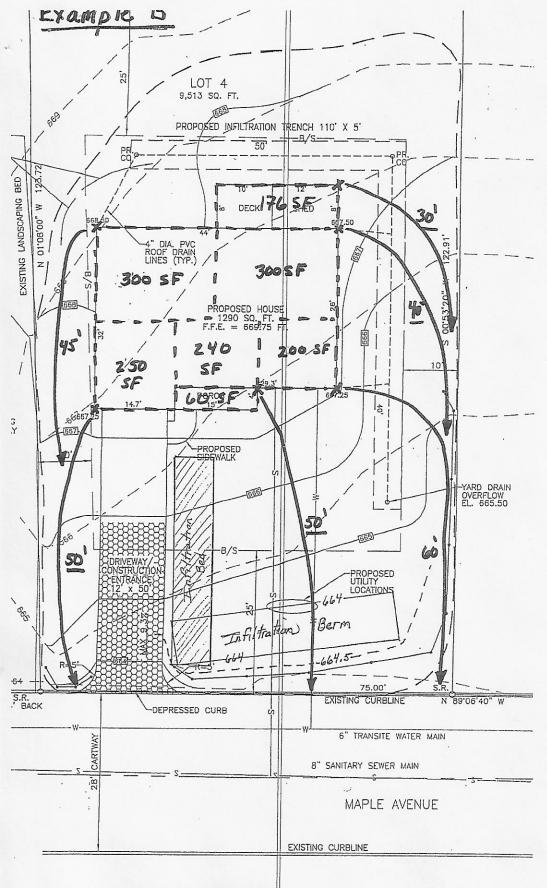**Step 4:** Select BMP's and size according to the volume of stormwater that needs to be managed in Step 3.

Table # 3 - BMP Sizing Table*

BMP Type	Necessary Volume** (from Step 3 above)	Length	Width	Depth	Void Ratio	Volume ***
Infiltration Bed or Trench					0.4	
Infiltration Berm					1	
Rain Garden					0.4 in stone 1.0 above ground	
Rain Barrel or other usable storage		Use known volume of rain barrel, etc. 1 cubic foot is equal to 7.48 gallons.			1	
Other						

* Chart should only be used when a formal SWM Site Plan is not required.
** Should not include areas that were proven to be 100% disconnected
*** Volume = Length x Width x Depth x Void Ratio

Example b

LOT 4
9,513 SQ. FT.

PROPOSED INFILTRATION TRENCH 110' X 5'

B/S

50'

PR. CO.   PR. CO.

EXISTING LANDSCAPING BED

N 01°08'00" W 123.72

25'

669

668.50

DECK 176 SF SHED

30'

10'   12

8'   8'

667.50

4" DIA. PVC
ROOF DRAIN
LINES (TYP.)

300 SF   300 SF

S 00°53'20" W 122.91

44'

45'

32'

PROPOSED HOUSE
1290 SQ. FT.
F.F.E. = 669.75 FT.

25'

240
SF

200 SF

250
SF

60 SF

29.3'

666.25

10'

667.25

14.7'

15'

PROPOSED
SIDEWALK

YARD DRAIN
OVERFLOW
EL. 665.50

665

40'

Infiltration Bed

50'

655

DRIVEWAY/
CONSTRUCTION
ENTRANCE
12' X 50'

PROPOSED
UTILITY
LOCATIONS

B/S

50'

8'

664

MAX 9.3%

664

25'

Infiltration Berm

664.5

R=5'

R=5'

664.5

S.R.
BACK

75.00'

DEPRESSED CURB

EXISTING CURBLINE   S.R.

N 89°06'40" W

28' CARTWAY

W

6" TRANSITE WATER MAIN

8" SANITARY SEWER MAIN

MAPLE AVENUE

EXISTING CURBLINE

PROPOSED CONDITIONS
SCALE: 1" = 10'